Permit #: 28.0801-29

Effective Date: Proposed

Expiration Date: Proposed

SOUTH DAKOTA DEPARTMENT OF

ENVIRONMENT AND NATURAL RESOURCES

TITLE V AIR QUALITY PERMIT AND ACID RAIN PERMIT

Richard C. Sweetman, Chairman Board of Minerals and Environment

Under the South Dakota Air Pollution Control Regulations

Pursuant to Chapter 34A-1-21 of the South Dakota Codified Laws and the Air Pollution Control Regulations of the State of South Dakota and in reliance on statements made by the owner designated below, a permit to operate is hereby issued by the Secretary of the Department of Environment and Natural Resources. This permit authorizes such owner to operate the unit(s) listed in Table 1-1 under the listed conditions.

A. Owners

1. Company Names and Mailing Addresses

Montana-Dakota Utilities Co. a Division of MDU Resources Group 400 North Fourth Street Bismarck, North Dakota 58501

Northwestern Energy 600 Market Street Huron, South Dakota 57350

Otter Tail Corporation d.b.a. Otter Tail Power Company Operator of Big Stone I 215 South Cascade Street PO Box 496 Fergus Falls, Minnesota 56538-0496

2. Actual Source Location if Different from Above

Portions of Section 11 and 13, Township 121N Range 47W and Section 7 Township 121N Range 46W, Grant County

48450 144th Street Big Stone City, South Dakota

3. Permit Contact

Terry Graumann; Manager, Environmental Services (218) 739-8407

4. Facility Contact

Terry Graumann; Manager, Environmental Services

(218) 739-8407

5. Responsible Official

Terry Graumann; Manager, Environmental Services (218) 739-8407

B. Permit Revisions or Modifications

Not applicable

C. Type of Operation

An electrical generation facility

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1.0 STANDARD CONDITIONS

Construction and operation of source. In accordance with Administrative Rules of South Dakota (ARSD) 74:36:05:16.01(8), the owner or operator shall construct and operate the units, controls, and processes as described in Table 1-1 in accordance with the statements, representations, and supporting data contained in the complete permit application submitted and dated June 4, 2001, July 20, 2005, and June 20, 2006, unless modified by the conditions of this permit. The application consists of the application forms, supporting data, and supplementary correspondence. If the owner or operator becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in an application, such information shall be promptly submitted. The control equipment shall be operated in a manner that achieves compliance with the conditions of this permit at all times.

Table 1-1 – Description of Permitted Units, Operations, and Processes

| Unit | Description | Operating Rate | Control Device |
|-----------------|--|-----------------------------|--|
| #1 | 1975 Babcock & Wilcox | 5,609 million Btus per | Baghouse |
| | Company balanced draft, | hour | The |
| | cyclone-fired steam boiler that is used to produce electricity and | | The exhaust gases from the |
| | provide steam to an ethanol | | baghouse shall be routed to the wet flue gas desulfurization |
| | plant. The boiler is equipped | | system associated with Unit #13 |
| | with an over-fire air system and | | as noted under the terms of this |
| | fired on subbituminous coal and | | permit. |
| | alternative fuels and wastes as | | |
| | noted under the terms of this | | |
| | permit. | | |
| #2 | 1973 Combustion Engineering | 210 million Btus per | Not applicable |
| | auxiliary steam boiler, Model | hour heat input | |
| | #31-A014. The boiler is fired | | |
| | with distillate oil and biodiesel. | | |
| #3 | 1961 Bros steam heating boiler, | 98 million Btus per | Not applicable |
| | Model #461-03. The boiler is | hour heat input | |
| | fired with distillate oil and | | |
| 44 | biodiesel. | 1 000 1:10,000 45 1004 | Not applicable |
| #4 | 1974 Waukesha Power Systems emergency diesel generator, | 1,000 kilowatts heat output | Not applicable |
| | Model #VHP5900 DSIU. The | output | |
| | diesel generator is fired with | | |
| | distillate oil and biodiesel. | | |
| #5 ¹ | Live fuel storage building and | 3,000 tons per hour | Baghouse |
| | transfer point. | • | |
| #6 ¹ | Rotary car dumper conveyor. | 3,000 tons per hour | Baghouse |
| | | | |

| Unit | Description | Operating Rate | Control Device |
|-------------|--|------------------------------|--------------------------------------|
| #7a | Rotary car dumper building. | 3,000 tons per hour. | Baghouse |
| #7b | | The maximum | Baghouse |
| #7c | | capacity may increase | Baghouse |
| #7 d | | to 3,600 tons per hour | Baghouse |
| | | during the term of this | |
| | | permit. | |
| #8 | Fuel transfer house. | 1,100 tons per hour | Baghouse |
| #9 | North fuel conveying system and | 550 tons per hour | A set of baghouses |
| | silo vents. | | |
| #10 | South fuel conveying system, | 550 tons per hour | A set of baghouses |
| | silo vents, and plant distribution | | |
| | bin. | | |
| #11 | Fly ash storage silo. | 19 tons per hour | Baghouse. A second baghouse is |
| | | | installed as a back-up. |
| #12 | Lime storage silo. | 15 tons per hour | Baghouse |
| | pllowing units may be installed and | | • |
| #13 | Super-critical pulverized coal | 6,000 million Btus per | Baghouse, wet flue gas |
| | fired boiler fired on | hour heat input ² | desulfurization, and selective |
| | subbituminous coal, ultra low | | catalytic reduction. |
| | sulfur diesel, or biodiesel. The | | |
| | super-critical pulverized coal | | |
| | fired boiler will be equipped | | |
| | with low NOx burners. | 2 | |
| #14 | Fire pump fired on ultra low | 420 horsepower ² | Catalyzed diesel particulate filter |
| 114 = | sulfur diesel and/or biodiesel. | 2 220 1 21 2 | |
| #15 | Generator fired on ultra low | 2,220 kilowatts ² | Catalyzed diesel particulate filter |
| 110.5 | sulfur diesel and/or biodiesel. | 2251 | |
| #25 | Booster pump (boiler) fired on ultra low sulfur diesel and/or | 225 horsepower ² | Catalyzed diesel particulate filter |
| | | | |
| 422 | biodiesel. | 225 hansan 2 | Catalana d diagal a anti-cal-ta file |
| #33 | Booster pump (coal area) fired on ultra low sulfur diesel and/or | 225 horsepower ² | Catalyzed diesel particulate filter |
| | biodiesel. | | |
| | blodlesel. | | |

¹ – Unit #5 and #6 shall be shutdown and no longer operated on or after the initial startup of Unit #13; and

1.2 Duty to comply. In accordance with ARSD 74:36:05:16.01(12), the owner or operator shall comply with the conditions of this permit. An owner or operator who knowingly makes a

² – The operating rate is the nominal or manufacturer listed operating rate noted in the PSD application and is descriptive only.

false statement in any record or report or who falsifies, tampers with, or renders inaccurate, any monitoring device or method is in violation of this permit. A violation of any condition in this permit is grounds for enforcement, reopening this permit, permit termination, or denial of a permit renewal application. The owner or operator, in an enforcement action, cannot use the defense that it would have been necessary to cease or reduce the permitted activity to maintain compliance. The owner or operator shall provide any information requested by the Secretary to determine compliance or whether cause exists for reopening or terminating this permit.

- 1.3 Property rights or exclusive privileges. In accordance with ARSD 74:36:05:16.01(12), the State's issuance of this permit, adoption of design criteria, and approval of plans and specifications does not convey any property rights of any sort, any exclusive privileges, any authorization to damage, injure or use any private property, any authority to invade personal rights, any authority to violate federal, state or local laws or regulations, or any taking, condemnation or use of eminent domain against any property owned by third parties. The State does not warrant that the owner's or operator's compliance with this permit, design criteria, approved plans and specifications, and operation under this permit, will not cause damage, injury or use of private property, an invasion of personal rights, or violation of federal, state or local laws or regulations. The owner or operator is solely and severally liable for all damage, injury or use of private property, invasion of personal rights, infringement of federal, state or local laws and regulations, or taking or condemnation of property owned by third parties, which may result from actions taken under the permit.
- **1.4** Penalty for violating a permit condition. In accordance with South Dakota Codified Laws (SDCL) 34A-1, a violation of a permit condition may subject the owner or operator to civil or criminal prosecution, a state penalty of not more than \$10,000 per day per violation, injunctive action, administrative permit action, and other remedies as provided by law.
- **1.5** <u>Inspection and entry.</u> In accordance with SDCL 34A-1-41, the owner or operator shall allow the Secretary to:
- 1. Enter the premises where a regulated activity is located or where pertinent records are stored;
- 2. Have access to and copy any records that are required under this permit;
- 3. Inspect operations regulated under this permit; and/or
- 4. Sample or monitor any substances or parameters for the purpose of assuring compliance.
- **1.6** <u>Severability.</u> In accordance with ARSD 74:36:05:16.01(11), any portion of this permit that is void or challenged shall not affect the validity of the remaining permit requirements.
- **1.7** Permit termination, modification, or revocation. In accordance with ARSD 74:36:05:46, the Secretary may recommend that the Board of Minerals and Environment terminate, modify, or revoke this permit for violations of SDCL 34A-1 or the federal Clean Air Act or for nonpayment of any outstanding fee or enforcement penalty.

- **1.8** <u>Credible evidence.</u> In accordance with ARSD 74:36:13:07, credible evidence may be used for the purpose of establishing whether the owner or operator has violated or is violation of this permit. Credible evidence is as follows:
- 1. Information from the use of the following methods is presumptively credible evidence of whether a violation has occurred at the source:
 - a. A monitoring method approved for the source pursuant to 40 CFR § 70.6(a)(3) and incorporated in this permit; or
 - b. Compliance methods specified in an applicable plan;
- 2. The following testing, monitoring, or information gathering methods are presumptively credible testing, monitoring, or information-gathering methods:
 - a. Any monitoring or testing methods approved in this permit, including those in 40 CFR Parts 51, 60, 61, and 75; or
 - b. Other testing, monitoring, or information-gathering methods that produce information comparable to that produced by any method in section (1) or (2)(a).

2.0 PERMIT FEES

- **2.1** Annual air fee required. In accordance with ARSD 74:36:05:06.01(15), the owner or operator shall submit an annual administrative fee and an annual fee. The fee is based on actual emissions in accordance with ARSD 74:37.
- **Annual operational report.** In accordance with ARSD 74:37:01:06, the Secretary will supply the owner or operator with an annual operational report in January of each year. The owner or operator shall complete and submit the operational report to the Secretary by March 1 of each year. The responsible official shall sign the operational report in the presence of a notary public.
- **2.3** Annual air fee. In accordance with ARSD 74:37:01:08, the Secretary will notify the owner or operator of the required annual air emission fee and administrative fee by June 1 of each year. The fees shall accrue on July 1 and are payable to the Department of Revenue by July 31 of each year.

3.0 PERMIT AMENDMENT AND MODIFICATION CONDITIONS

3.1 Permit flexibility. In accordance with ARSD 74:36:05:30, the owner or operator shall have the flexibility to make changes to the source during the term of this permit. The owner or operator shall provide the Secretary written notice at least seven days in advance of the proposed

change (NOTE: The Secretary will forward a copy of the written notice to EPA). The written notice shall include a brief description of the change, the date on which the change is to occur, any change in emissions, and the proposed changes to this permit.

The Secretary will notify the owner or operator whether the change is an administrative permit amendment, a minor permit amendment, or a permit modification. A proposed change that is considered an administrative permit amendment or a minor permit amendment can be completed immediately after the Secretary receives the written notification. The owner or operator must comply with both the applicable requirements governing the change and the proposed permit terms and conditions until the Secretary takes final action on the proposed change.

A proposed change that is considered a modification can not be constructed until the Secretary takes final action on the proposed change. Permit modifications are subject to the same procedural requirements, including public comment, as the original permit issuance except that the required review shall cover only the proposed changes.

- **3.2** Administrative permit amendment. In accordance with ARSD 74:36:05:33, the Secretary has 60 days from receipt of a written notice to verify that the proposed change is an administrative permit amendment. The Secretary considers a proposed change an administrative permit amendment if the proposed change accomplishes one of the following:
- 1. Corrects typographical errors;
- 2. Changes the name, address, or phone number of any person identified in this permit or provides a similar minor administrative change at the source;
- 3. Requires more frequent monitoring or reporting by the source;
- 4. The ownership or operational control of a source change and the Secretary determines that no other change in this permit is necessary. However, the new owner must submit a certification of applicant form and a written statement specifying the date for transfer of operating permit responsibility, coverage, and liability; or
- 5. Any other changes that the Secretary and the administrator of EPA determines to be similar to those requirements in this condition.
- 3.3 Minor permit amendment. In accordance with ARSD 74:36:05:38, the Secretary has 90 days from receipt of a written notice or 15 days after the end of EPA's 45-day review period, whichever is later, to take final action on a minor permit amendment. Final action consists of issuing or denying a minor permit amendment or determining that the proposed change is a permit modification. The Secretary considers a proposed change to be a minor permit amendment if the proposed change:
- 1. Does not violate any applicable requirements;
- 2. Does not involve significant changes to existing monitoring, reporting, or record keeping requirements;

- 3. Does not require or change a case-by-case determination of an emission limit or other standard, a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis; or
- 4. Does not seek to establish or change a permit term or condition for which the source has assumed to avoid an applicable requirement, a federally enforceable emission cap, or an alternative emission limit. An alternative emission limit is approved pursuant to regulations promulgated under section 112(i)(5) of the federal Clean Air Act.
- **3.4 Permit modification.** In accordance with ARSD 74:36:05:39, an owner or operator may apply for a permit modification. A permit modification is any proposed change that meets the definition of a modification in ARSD 74:36:01:10 or is not an administrative amendment or a minor permit amendment. Modification is defined as a physical change or change in operation that increases the amount of air pollutant emitted by the source or results in the emission of an air pollutant not previously emitted. Permit modifications are subject to the same procedural requirements, including public comment, as the original permit issuance except that the required review shall cover only the proposed changes.
- **3.5 Permit revision.** In accordance with ARSD 74:36:05:40, the Secretary may reopen and revise this permit to meet requirements of SDCL 34A-1 or the federal Clean Air Act.
- **Testing new fuels or raw materials.** In accordance with ARSD 74:36:11:04, an owner or operator may request permission to test a new fuel or raw material to determine if it is compatible with existing equipment before requesting a permit amendment or modification. A complete test proposal shall consist of the following:
- 1. A written proposal that describes the new fuel or raw material, operating parameters, and parameters that will be monitored and any testing associated with air pollutant emissions during the test;
- 2. An estimate of the type and amount of regulated air pollutant emissions that will result from the proposed change; and
- 3. The proposed schedule for conducting the test. In most cases the owner or operator will be allowed to test for a maximum of one week. A request for a test period longer than one week will need additional justification. A test period shall not exceed 180 days.

The Secretary shall approve, conditionally approve, or deny in writing the test proposal within 45 days after receiving a complete proposal. Approval conditions may include changing the test schedule, pollutant sampling, and/or analysis methods. Pollutant sampling and analysis methods may include, but are not limited to performance testing, visible emission evaluation, fuel analysis, dispersion modeling, and monitoring of raw material or fuel rates.

If the Secretary determines that the proposed change will result in an increase in the emission of a regulated air pollutant or result in the emission of an additional regulated air pollutant, the Secretary shall give public notice of the proposed test for 30 days. The Secretary shall consider

all comments received during the 30-day public comment period before making a final decision on the test.

The Secretary will not approve a test if the test would cause or contribute to a violation of a national ambient air quality standard.

4.0 PERMIT RENEWAL REQUIREMENTS

- **4.1 Permit effective.** In accordance with ARSD 74:36:05:07, this permit shall expire five years from date of issuance unless reopened or terminated for cause.
- **4.2 Permit renewal.** In accordance with ARSD 74:36:05:08, the owner or operator shall submit an application for a permit renewal at least 180 days before the date of permit expiration if the owner or operator wishes to continue an activity regulated by this permit. The current permit shall not expire and shall remain in effect until the Secretary takes final action on the timely permit renewal application.
- **4.3 Permit expiration.** In accordance with ARSD 74:36:05:28, permit expiration terminates the owner's or operator's right to operate any unit covered by this permit.

5.0 RECORD KEEPING AND REPORTING REQUIREMENTS

S.1 Record keeping and reporting. In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall maintain all monitoring data, records, reports, and pertinent information specified by this permit for five years from the date of sample, measurement, report, or application. The records shall be maintained on-site for the first two years and may be maintained off-site for the last three years. All records must be made available to the Secretary for inspection. All notifications and reports shall be submitted to the following address:

South Dakota Department of Environment and Natural Resources PMB 2020, Air Quality Program 523 E. Capitol, Joe Foss Building Pierre, SD 57501-3182

Signatory requirements. In accordance with ARSD 74:36:05:12(17), all applications submitted to the Secretary shall be signed and certified by a responsible official. A responsible official for a corporation is a responsible corporate officer and for a partnership or sole proprietorship is a general partner or the proprietor, respectively. All reports or other information submitted to the Secretary shall be signed and certified by a responsible official or a duly authorized representative. A person is a duly authorized representative only if:

- 1. The authorization is made in writing by a person described above and submitted to the Secretary; and
- 2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

The responsible official shall notify the Secretary if an authorization is no longer accurate. The new duly authorized representative must be designated prior to or together with any reports or information to be signed by a duly authorized representative.

5.3 <u>Certification statement.</u> In accordance with ARSD 74:36:05:16.01(14)(a), all documents required by this permit, including application forms, reports, and compliance certification, must be certified by a responsible official or a duly authorized representative. The certification shall include the following statement:

"I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this document and all attachments are true, accurate, and complete."

- **Monitoring log.** In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall maintain a monitoring log. The monitoring log shall contain the following information:
- 1. Maintenance schedule for each piece of control equipment listed in Table 1-1. At a minimum, the maintenance schedule shall meet the manufacturer's recommended schedule for maintenance;
- 2. The following information shall be recorded for maintenance performed in accordance with the maintenance schedule:
 - a. Identify the unit;
 - b. The date and time maintenance was performed;
 - c. Description of the type of maintenance;
 - d. Reason for performing maintenance; and
 - e. Signature of person performing maintenance;
- 3. The following information shall be recorded for each visible emission reading required in permit condition 8.1:
 - a. Identify the unit;
 - b. The date and time the visible emission reading was performed;
 - c. If visible emissions were observed:
 - d. Description of maintenance performed to eliminate visible emissions;
 - e. Visible emission evaluation if visible emissions are not eliminated; and
 - f. Signature of person performing visible emission reading and/or visible emission evaluation:

- 4. The owner or operator shall maintain relevant records of the occurrence and duration of each startup, shutdown, or malfunction of process equipment and/or air pollution control equipment;
- 5. The following information shall be recorded within two days of each emergency exceedance:
 - a. The date of the emergency exceedance and the date the emergency exceedance was reported to the Secretary;
 - b. The cause(s) of the emergency;
 - c. The reasonable steps taken to minimize the emissions during the emergency; and
 - d. A statement that the permitted equipment was being properly operated at the time of the emergency exceedance;
- 6. A record of the carbon monoxide concentration and the electrical load for each time chipped wood treated with copper arsenate and pentachlorophenol is burned in Unit #1;
- 7. A record of the pressure drop readings for the units specified in permit condition 8.6; and
- 8. A daily record on the continuous emission monitoring data specified in permit condition 8.4.
- **Monthly records.** In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall calculate and record the following each month:
- 1. Following the initial startup of Unit #13, the amount of sulfur dioxide, in tons, emitted into the ambient air from Unit #1, #2, #3, #4, #13, #14, #15, #25 and #33 during the month and during the 12-month rolling period ending that month and supporting documentation;
- 2. Following the initial startup of Unit #13, the amount of nitrogen oxide, in tons, emitted into the ambient air from Unit #1, #2, #3, #4, #13, #14, #15, #25 and #33 during the month and during the 12-month rolling period ending that month and supporting documentation;
- 3. Following the initial startup of Unit #13, the amount of plantwide mercury, in tons, emitted into the ambient air during the month and during the 12-month rolling period ending that month and supporting documentation;
- 4. Following the initial startup of Unit #13, the amount of hazardous air pollutants individually and any combination), in tons, emitted into the ambient air from Unit #13 during the month and during the 12-month rolling period ending that month and supporting documentation;
- 5. The total amount of refuse derived fuel burned in Unit #1 per month, in pounds or tons;
- 6. The total amount of subbituminous coal and alternative fuels and waste, except refuse derived fuel, burned in Unit #1 per month, in pounds or tons;
- 7. The amount of particulate matter 10 microns in diameter or less emitted into the ambient air from Unit #12 during the month and during the 12-month rolling period ending that month; and
- 8. The amount of plastic chips, granulated insulation, gasket and "O" rings, manufactured wood waste containing formaldehyde resins and materials, tube forms, rubber belting, and petroleum coke burned in Unit #1 per month, in tons, during the month and during the 12-month rolling period ending that month.
- **5.6** Annual records. In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall calculate and record the following amounts from January 1 to December 31 of each year:

- 1. The amount and type of fuel burned or material processed through each permitted unit;
- 2. The number of hours each permitted unit operated; and
- 3. The amount of total suspended particulate matter, particulate matter 10 microns in diameter or less, sulfur dioxide, nitrogen oxide, volatile organic compounds, carbon monoxide, hazardous air pollutants, and mercury emissions from each permitted unit.
- **5.7 Initial startup notification.** In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall notify the Secretary of the initial startup date of Unit #13. The notification shall be postmarked within 15 days after the date of initial startup. For the purpose of this condition, commencing operation means the initial startup of the boiler, which is the first date that the boiler was operated when firing pulverized coal.
- **5.8** <u>Initial commercial startup notification.</u> In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall notify the Secretary of the date of commercial operation of Unit #13. The notification shall be postmarked within 15 days after the date of commercial operation. For the purpose of this condition, commence commercial operation means to have begun to generate electricity for sale, including the sale of test generation.
- **5.9 Quarterly reports.** In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall submit a quarterly report. The report shall contain the following information:
- 1. Name of the facility, permit number, reference to this permit condition, and identify the submittal as a quarterly report;
- 2. Calendar dates covered in the quarterly report;
- 3. Following the initial startup of Unit #13, the quantity of sulfur dioxide and nitrogen oxide emitted from Unit #1, #2, #3, #4, #13, #14, #15, #25 and #33, in tons, for each month and the 12-month rolling total for each month in the reporting period and supporting documentation;
- 4. The quantity of particulate matter 10 microns in diameter or less emitted from Unit #12, in tons, for each month and the 12-month rolling total for each month in the reporting period and supporting documentation;
- 5. Following the initial startup of Unit #13, the quantity of plantwide mercury emitted, in tons, for each month and the 12-month rolling total for each month in the reporting period and supporting documentation;
- 6. Following the initial startup of Unit #13, the quantity of hazardous air pollutants (individually and any combination) emitted from Unit #13, in tons, for each month and the 12-month rolling total for each month in the reporting period and supporting documentation;
- 7. The quantity of plastic chips, granulated insulation, gasket and "O" rings, manufactured wood waste containing formaldehyde resins and materials, tube forms, rubber belting, and petroleum coke burned in Unit #1, in tons, for each month and the 12-month rolling period for each month in the reporting period and supporting documentation;
- 8. A summary of the excess emissions as determined by the continuous emission monitoring systems:

- a. The magnitude of opacity for all six minute block averages where the average opacity was greater than or equal to 20 percent;
- b. The date and duration of the excess emissions;
- c. The causes of the excess emissions (startup/shutdown, control equipment problems, process problems, other known causes, or unknown causes); and
- d. The percentage of time the excess emissions occurred during operation of the permitted unit;
- 7. The amount of time a continuous emission monitoring system was down due to monitoring equipment malfunction, non-monitoring malfunction, quality assurance calibrations, other known causes, or unknown causes;
- 8. The percentage of time a monitoring system was down while the permitted unit was in operation;
- 9. The percentage of refuse derived fuel, by weight, burned in Unit #1 during the calendar quarter; and
- 10. A summary of the time period that the pressure drop for those units specified in permit condition 8.6 was not within the range noted.

The first quarterly report shall be submitted at the end of the calendar quarter that this permit is issued. All other quarterly reports shall be postmarked no later than the 30th day following the end of each calendar quarter (i.e. January 30th, April 30th, July 30th, and October 30th).

- **5.10** Annual compliance certification. In accordance with ARSD 74:36:05:16.01(14), the owner or operator shall submit an annual compliance certification letter to the Secretary by March 1 of each year this permit is in effect (NOTE: The Secretary will forward a copy of the certification letter to EPA). The certification shall contain the following information:
- 1. Methods used to determine compliance including: monitoring, record keeping, performance testing, and reporting requirements;
- 2. The source is in compliance and will continue to demonstrate compliance with all applicable requirements;
- 3. In the event the source is in noncompliance, a compliance plan that indicates how the source has or will be brought into compliance;
- 4. A statement that the owner or operator held sulfur dioxide allowances in the facility account for Unit #1 that equaled or exceeded the actual sulfur dioxide emissions for the reporting period; and
- 5. Certification statement required in permit condition 5.3.
- **S.11** Reporting permit violations. In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall report all permit violations. A permit violation should be reported as soon as possible, but no later than the first business day following the day the violation was discovered. The permit violation may be reported by telephone to the South Dakota Department of Environment and Natural Resources at (605) 773-3151 or by FAX at (605) 773-5286.

A written report shall be submitted within five days of discovering the permit violation. Upon prior approval from the Secretary, the submittal deadline for the written report may be extended up to 30 days. The written report shall contain:

- 1. Description of the permit violation and its cause(s);
- 2. Duration of the permit violation, including exact dates and times; and
- 3. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the permit violation.

6.0 CONTROL OF REGULATED AIR POLLUTANTS

- **6.1 Visibility limit.** In accordance with ARSD 74:36:12:01, the owner or operator may not discharge into the ambient air an air contaminant of a density equal to or greater than that designated as 20 percent opacity from any permitted unit, operation, or process listed in Table 1-1. This provision does not apply when the presence of uncombined water is the only reason for failure to meet the requirement.
- **6.2** <u>Visibility exceedances.</u> In accordance with ARSD 74:36:12:02, an exceedance of the operating limit in permit condition 6.1 is not considered a violation during brief periods of soot blowing, start-up, shutdown, or malfunction. Malfunction means any sudden and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. A failure caused entirely or in part by poor maintenance, careless operation, preventable equipment breakdown, or any other cause within the control of the owner or operator of the source is not a malfunction and is considered a violation.
- **6.3** Total suspended particulate matter limits. In accordance with ARSD 74:36:06:02(1) and ARSD 74:36:06:03(1), the owner or operator shall not allow the emission of total suspended particulate matter in excess of the emission limit specified in Table 6-1 for the appropriate permitted unit, operation, and process. Compliance with the particulate matter emission limit is based on stack testing in accordance with ARSD 74:36:06:06.

Table 6-1 - Total Suspended Particulate Matter Emission Limit

| Unit | Description | Emission Limit | |
|-----------------|----------------------------|--|--|
| #1 | Coal fired cyclone boiler | 0.3 pounds per million Btus heat input | |
| #2 | Auxiliary boiler | 0.4 pounds per million Btus heat input | |
| #3 | Heating boiler | 0.4 pounds per million Btus heat input | |
| #4 | Generator | 0.6 pounds per million Btus heat input | |
| #5 ¹ | Live fuel storage building | 93 pounds per hour | |
| #6 ¹ | Rotary car dumper conveyor | 93 pounds per hour | |
| #7 ¹ | Rotary car dumper building | 93 pounds per hour | |
| #8 | Fuel transfer house | 79 pounds per hour | |
| #9 | North Fuel conveying | 70 pounds per hour | |

system

| Unit | Description | Emission Limit | |
|------|--|--------------------|--|
| #10 | South fuel conveying system 70 pounds per hour | | |
| #11 | #11 Fly ash storage silo 29 pounds per hour | | |
| , , | | 25 pounds per hour | |

¹ – The total suspended particulate matter emission limit is no longer applicable on or after the initial startup of Unit #13.

6.4 Sulfur dioxide limits. In accordance with ARSD 74:36:06:02(2), the owner or operator shall not allow the emission of sulfur dioxide in excess of the emission limit specified in Table 6-2 for the appropriate permitted unit, operation, and process.

Table 6-2 – Sulfur Dioxide Emission Limit

| Unit | Description | Emission Limit | |
|-----------------|---------------------------|--|--|
| #1 | Coal fired cyclone boiler | 3.0 pounds per million Btus heat input | |
| #2 1 | Auxiliary boiler | 3.0 pounds per million Btus heat input | |
| #3 1 | Heating boiler | 3.0 pounds per million Btus heat input | |
| #4 ¹ | Generator | 3.0 pounds per million Btus heat input | |

¹ – The sulfur dioxide emission limit is no longer applicable on or after the initial startup of Unit #13.

Compliance with the sulfur dioxide emission limit is based on a three-hour rolling average, which is the arithmetic average of three contiguous one-hour periods.

PM10 emission limits. In accordance with ARSD 74:36:05:16.01(8), on or after the initial startup of Unit #13, the owner or operator shall not allow the emissions of particulate matter 10 microns in diameter or less (PM10) in excess of the emission limits specified in Table 6-3 for the appropriate permitted unit, operation, and process, except Unit #12. The PM10 emission limit in Table 6-3 for Unit #12 is applicable on and after the date the permit is issued.

Table 6-3 – PM10 Emission Limits

| Unit | Description | PM10 Emission Limit ¹ | |
|------|----------------------------|---|--|
| #1 | Coal fired cyclone boiler | 0.26 pounds per million Btus (filterable) | |
| #2 | Auxiliary boiler | 0.01 pounds per million Btus (filterable) | |
| #3 | Heating boiler | 0.01 pounds per million Btus (filterable) | |
| #4 | Generator | 0.32 grams per horsepower-hour (filterable); and | |
| | | 0.9 pounds per hour (filterable) | |
| #7a | Rotary car dumper building | 0.01 grains per standard cubic foot (filterable); and | |
| | | 3.2 pounds per hour (filterable) | |
| #7b | | 0.01 grains per standard cubic foot (filterable); and | |
| | | 3.2 pounds per hour (filterable) | |
| #7c | | 0.01 grains per standard cubic foot (filterable); and | |
| | | 3.2 pounds per hour (filterable) | |
| #7d | | 0.01 grains per standard cubic foot (filterable); and | |

| Unit | Description | PM10 Emission Limit ¹ |
|------|-----------------------------|---|
| | | 3.2 pounds per hour (filterable) |
| #8 | Fuel transfer house | 0.02 grains per standard cubic foot (filterable); and 3.2 pounds per hour |
| #9 | North Fuel conveying system | 0.01 grains per standard cubic foot (filterable); and 1.2 pounds per hour |
| #10 | South fuel conveying system | 0.01 grains per standard cubic foot (filterable); and 1.4 pounds per hour |
| #11 | Fly ash storage silo | 0.01 grains per standard cubic foot (filterable); and 0.4 pounds per hour |
| #12 | Lime storage silo | 0.01 grains per standard cubic foot (filterable); and 0.1 pounds per hour |

¹ Compliance with the emission limit is based on the average of three test runs based on the performance test procedures and requirements in Chapter 7.0.

Approved alternative fuels and wastes for Unit #1. In accordance with ARSD 74:36:05:16.01(8), the owner or operator may use the following alternative fuels and non hazardous wastes as a fuel for Unit #1:

- 1. Lignite coal;
- 2. Agricultural crop residue and waste seeds;
- 3. Distillate oil;
- 4. Tire derived fuel:
- 5. Refuse derived fuel;
- 6. Waste toner powder;
- 7. Trees and natural wood;
- 8. Used oil and solvents (on-site generated);
- 9. Plastic chips;
- 10. Granulated insulation;
- 11. Gasket and "O" rings;
- 12. Manufactured wood waste containing formaldehyde resins and materials;
- 13. Tube forms;
- 14. Rubber belting;
- 15. Petroleum coke;
- 16. Oil filters (on-site generated);
- 17. Chipped wood treated with copper arsenate and pentachlorophenol;
- 18. Boiler steam side cleaning waste;
- 19. Floor dry, diatomaceous earth, dirt, sorbent debris containing non PCB oil; and
- 20. Evaporative brine concentrator supernatant at a maximum feed rate of 130 gallons per minute.

This permit condition does not limit the owner or operator from requesting and being approved to burn other alternative fuels or wastes that are not listed above. The owner or operator shall

submit an application and receive written approval prior to any additional alternative fuels or wastes being used to fire Unit #1.

- 6.7 <u>Limitations on approved alternative fuels and wastes for Unit #1.</u> In accordance with ARSD 74:36:05:16.01(8), the owner or operator may burn only the following amounts for the specified alternative fuel or non hazardous waste in Unit #1 during a 12-month rolling period:
- 1. 15 tons of plastic chips;
- 2. 600 tons of granulated insulation;
- 3. 1,800 tons of gasket and "O" rings;
- 4. 792 tons of manufactured wood waste containing formaldehyde resins and materials;
- 5. 30 tons of tube forms;
- 6. 480 tons of rubber belting; and
- 7. 70,000 tons of petroleum coke.

The owner or operator shall submit an application and receive written approval prior to using one of the above alternative fuels or wastes in an amount greater than specified in this permit condition.

- **6.8** Unit #1 operating requirements for certain alternative fuels and wastes. In accordance with ARSD 74:36:05:16.01(8), the owner or operator shall burn chipped wood treated with copper arsenate and pentachlorophenol under the following conditions:
- 1. The carbon monoxide concentration in Unit #1's stack shall be less than or equal to 100 parts per million; and
- 2. The electrical load generated by Unit #1 is greater than 215 megawatts.
- **Co-fired combustor qualification.** In accordance with ARSD 74:36:05:16.01(8), the owner or operator shall limit the amount of fuel and/or waste burned in Unit #1 to 30 percent or less by weight of municipal solid waste as measured on a calendar quarter basis. By limiting the amount of fuel and/or waste burned, Unit #1 is considered a co-fired combustor as defined in ARSD 74:36:07:07, as referenced to 40 CFR § 60.51a. Refuse derived fuel is the only alternative fuel and/or waste approved for use as a fuel in Unit #1 that is considered a municipal solid waste.
- **6.10** New source performance standard for coal preparation plants. In accordance with ARSD 74:36:07:16, as referenced to 40 CFR §§ 60.250 through 60.254, the owner or operator shall comply with the particulate standards, monitoring, and testing requirements applicable to Unit #7 on and after the initial startup of Unit #13.
- **6.11** New source performance standard for stationary compression ignition internal combustion engines. In accordance with 40 CFR §§ 60.4200 through 60.4219, the owner or operator shall comply with all applicable standards and limitations, reporting, monitoring,

recordkeeping, testing, and notification requirements applicable to Unit #14, #15, #25 and #33.

- Air emission exceedances emergency conditions. In accordance with ARSD 74:36:05:16.01(18), the Secretary will allow for an unavoidable emission exceedance of a technology-based emission limit if the exceedance is caused by an emergency condition and immediate action is taken by the owner or operator to restore the operations back to normal. An emergency condition is a situation arising from a sudden and reasonably unforeseeable event beyond the control of the source, including acts of God. An emergency shall not include an emission exceedance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error. The owner or operator shall notify the Secretary within two working days of the incident and take all steps possible to eliminate the excess emissions. The notification must provide a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken. If the notification is submitted orally, a written report summarizing the information required by the notification shall be submitted and postmarked within 30 days of the oral notification.
- **Circumvention not allowed.** In accordance with ARSD 74:36:05:47.01, the owner or operator may not install, use a device, or use a means that conceals or dilutes an air emission that would otherwise violate this permit. This includes operating a unit or control device that emits air pollutants from an opening other than the designed stack, vent, or equivalent opening.
- **6.14** Minimizing emissions. In accordance with ARSD 74:36:07:01, as referenced to 40 CFR § 60.11(d), the owner or operator shall at all times, when practicable, maintain and operate all permitted units in a manner that minimizes air pollution emissions.

7.0 PERFORMANCE TESTS

- **7.1** Performance test may be required. In accordance with ARSD 74:36:11:02, the Secretary may request a performance test. A performance test shall be conducted while operating the unit at or greater than 90 percent of its maximum design capacity, unless otherwise specified by the Secretary. A performance test conducted while operating less the unit less than 90 percent of its maximum design capacity will result in the operation being limited to the percent achieved during the performance test. The Secretary has the discretion to extend the deadline for completion of the performance test required by the Secretary, if circumstances reasonably warrant but will not extend the deadline past a federally required performance test deadline.
- **Test methods and procedures.** The owner or operator shall conduct the performance test in accordance with 40 CFR Part 60, Appendix A; 40 CFR Part 63, Appendix A; and 40 CFR Part 51, Appendix M. The Secretary may approve an alternative method if a performance test specified in 40 CFR Part 60, Appendix A; 40 CFR Part 63, Appendix A; and 40 CFR Part 51, Appendix M is not federally applicable or federally required.

- **Representative performance test.** In accordance with ARSD 74:36:07:01, as referenced to 40 CFR § 60.8(c), performance tests shall be conducted under such conditions as the Secretary shall specify to the owner or operator based on the representative performance of the unit being tested. The owner or operator shall make available to the Secretary such records as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test nor shall emissions in excess of the level of the applicable emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in this permit.
- **7.4** Submittal of test plan. In accordance with ARSD 74:36:11:01, the owner or operator shall submit the proposed testing procedures to the Secretary at least 30 days prior to any performance test. The Secretary will notify the owner or operator if the proposed test procedures are approved or denied. If the proposed test procedures are denied, the Secretary will provide written notification that outlines what needs to be completed for approval.
- **Notification of test.** In accordance with ARSD 74:36:11:03, the owner or operator shall notify the Secretary at least 10 days prior to the start of a performance test to arrange for an agreeable test date when the Secretary may observe the test. The Secretary may extend the deadline for the performance test in order to accommodate schedules in arranging an agreeable test date.
- **7.6 Performance test report.** In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall submit a performance test report to the Secretary within 60 days after completing the performance test or by a date designated by the Secretary. The performance test report shall contain the following information:
- 1. A brief description of the process and the air pollution control system being tested;
- 2. Sampling location description(s);
- 3. A description of sampling and analytical procedures and any modifications to standard procedures;
- 4. Test results;
- 5. Quality assurance procedures and results;
- 6. Records of operating conditions during the test, preparation of standards, and calibration procedures;
- 7. Raw data sheets for field sampling and field and laboratory analyses;
- 8. Documentation of calculations;
- 9. All data recorded and used to establish parameters for compliance monitoring; and
- 10. Any other information required by the test method.

- **7.7** Initial performance test for PM10. In accordance with ARSD 74:36:11:02, the owner or operator shall conduct an initial performance test within 180 days after initial startup of Unit #13 to determine the emission rate of particulate matter 10 microns in diameter or less (filterable) on the following units:
- 1. Unit #2, #3, and #4;
- 2. Unit #7a, #7b, #7c, or #7d;
- 3. Unit #8, #11 or #12; and
- 4. Unit #9 or #10.
- **7.8** Initial performance test for nitrogen oxide. In accordance with ARSD 74:36:11:02, the owner or operator shall conduct an initial performance test on Unit #2, #3, #4, #14, #15, #25 and #33. The initial performance tests shall be conducted within 180 days after initial startup of Unit #13 to determine the nitrogen oxide emission rate for each unit.
- 7.9 <u>Initial sulfur content of liquid fuel for Unit #2, #3 and #4.</u> In accordance with ARSD 74:36:11:02, prior to firing distillate oil or biodiesel in Unit #2, #3 and #4 on or after the initial startup of Unit #13, the owner or operator shall obtain a grab sample from the storage tank(s) that supply distillate oil and biodiesel to Unit #2, #3 and #4. The grab sample shall be analyzed to determine the sulfur content of the distillate oil and biodiesel.
- **7.10** Initial sulfur content test of liquid fuel for Unit #14 #15, #25 and #33. In accordance with ARSD 74:36:11:02, prior to firing distillate oil or biodiesel in Unit #14 #15, #25 and #33, the owner or operator shall obtain an initial fuel supplier certification for the first load of distillate oil and biodiesel purchased or received. The fuel supplier certification shall include the following information:
- 1. The name of the oil supplier;
- 2. A statement from the oil supplier that the distillate oil complies with the specifications under the definition of distillate oil. Distillate oil means fuel oil that complies with the specifications for fuel oil numbers 1 or 2. Specifications for fuel oils are defined in the American Society for Testing and Materials in ASTM D396-78, "Standards Specifications for Fuel Oils"; and
- 3. A statement that the sulfur content of the distillate oil and/or biodiesel does not exceed 0.0015 weight percent sulfur.

In the case where a fuel supplier certification is not obtained, the owner or operator shall collect a grab sample from the distillate oil and/or biodiesel storage tank. The grab sample shall be analyzed to determine the sulfur content of the distillate oil and/or biodiesel in the storage tank prior to burning the distillate oil and/or biodiesel in Unit #14, #15, #25 and #33.

7.11 Periodic performance test for Unit #1. In accordance with ARSD 74:36:11:02, the owner or operator shall conduct periodic performance tests on Unit #1 to determine the emission rate of particulate matter 10 microns in diameter or less (filterable). The initial performance test

on Unit #1 shall be conducted within 180 days after permit issuance. A second test shall be completed within 540 to 720 days after the initial test was completed.

7.12 Initial performance test for hazardous air pollutants. In accordance with ARSD 74:36:11:02, the owner or operator shall conduct an initial performance test on Unit #13. The initial performance test shall be conducted within 180 days after initial startup of Unit #13 to determine the hydrogen fluoride and hydrogen chloride emission rates from Unit #13 and the hydrogen fluoride and hydrogen chloride control efficiencies.

8.0 MONITORING

- **8.1** Periodic monitoring for opacity limits. In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall demonstrate compliance with the opacity limits in Chapter 6.0, except for Unit #1, #6 through #12, inclusive, and #13, on a periodic basis. Periodic monitoring shall be based on the amount of visible emissions from each unit and evaluated according to the following steps:
- **Step 1:** If there are no visible emissions from a unit subject to an opacity limit, periodic monitoring shall consist of a visible emission reading. A visible emission reading shall consist of a visual survey of each unit over a two-minute period to identify if there are visible emissions. The visible emission reading must be conducted while the unit is in operation; but not during periods of startup, shutdown, or malfunction. Visible emission readings on each unit subject to an opacity limit in Chapter 6.0 shall be based on the following frequency:
 - a. The owner or operator shall conduct a visible emission reading once per calendar month;
 - b. If no visible emissions are observed from a unit in six consecutive monthly visible emission readings, the owner or operator may decrease the frequency of readings from monthly to semiannually for that unit; or
 - c. If no visible emissions are observed from a unit in two consecutive semiannual visible emission readings, the owner or operator may decrease the frequency of testing of readings from semiannually to annually for that unit.
- **Step 2:** If visible emissions are observed from a unit at any time other than periods of startup, shutdown, or malfunction, the owner or operator shall conduct a visible emission test on that unit to determine if the unit is in compliance with the opacity limit specified in Chapter 6.0. The emission test shall be for six minutes and conducted in accordance with 40 CFR Part 60, Appendix A, Method 9. The visible emission test must be conducted while the unit is in operation; but not during periods of startup, shutdown, or malfunction. Visible emission tests shall be based on the following frequency:
 - a. The visible emission test must be conducted within one hour of witnessing a visible emission from a unit during a visible emission reading;
 - b. If the visible emission test required in Step 2(a) results in an opacity value less than or equal to 50 percent of the opacity limit for the unit, the owner or operator shall perform a visible emission test once per month;

- c. If the opacity value of a visible emission test is less than five percent for six straight monthly tests, the owner or operator may revert back to monthly visible emission readings as required in Step 1;
- d. If the visible emission test required in Steps 2(a) or 2(b) results in an opacity value greater than 50 percent of the opacity limit but less than the opacity limit, the owner or operator shall perform a visible emission test once per week; or
- e. If the visible emission test in Step 2(d) results in an opacity value less than or equal to 50 percent of the opacity limit for six straight weekly readings, the owner or operator may revert back to a monthly visible emission test as required in Step 2(b).

The person conducting the visible emission test under permit condition 8.1 Step 2 must be certified in accordance with 40 CFR Part 60, Appendix A, Method 9. If a visible emission test is required before a person is certified in accordance with permit condition 8.2, the owner or operator shall notify the Secretary within 24 hours of observing the visible emissions to schedule a visible emission test performed by a state inspector.

8.2 Certified personnel – visible emission tests. In accordance with ARSD 74:36:13:07, within 180 days after permit issuance the owner or operator shall retain a person that is certified to perform a visible emission test in accordance with 40 CFR Part 60, Appendix A, Method 9. The owner or operator shall retain a certified person throughout the remaining term of this permit.

8.3 Monitoring sulfur content of distillate oil. In accordance with ARSD

74:36:05:16.01(9), on or after the initial startup of Unit #13, the owner or operator shall obtain a fuel supplier certification for each load of distillate oil and/or biodiesel purchased or received that will be burned in Unit #2, #3, #4, #14, #15, #25 and/or #33. The fuel supplier certification shall include the following information:

- 1. The name of the oil supplier;
- 2. A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil. Distillate oil means fuel oil that complies with the specifications for fuel oil numbers 1 or 2. Specifications for fuel oils are defined in the American Society for Testing and Materials in ASTM D396-78, "Standards Specifications for Fuel Oils";
- 3. A statement that the sulfur content of the distillate oil and/or biodiesel does not exceed 0.05 weight percent sulfur for distillate oil or biodiesel that will be burned in Unit #2, #3, and #4; and
- 4. A statement that the sulfur content of the distillate oil and/or biodiesel does not exceed 0.0015 weight percent sulfur for distillate oil or biodiesel that will be burned in Unit #14, #15, #25 and #33.

In the case where a fuel supplier certification is not obtained, the owner or operator shall collect a grab sample from the distillate oil and/or biodiesel storage tank within 30 days of receiving the shipment of distillate oil and/or biodiesel but before another load of distillate oil and/or biodiesel

is transferred into the storage tank. The grab sample shall be analyzed to determine the sulfur content of the distillate oil and/or biodiesel in the storage tank.

8.4 Continuous emission monitoring systems. In accordance with ARSD 74:36:05:16.01(9), 74:36:16:04 as referenced to 40 CFR § 75, 74:36:07:03 as referenced to § 60.49Da, and 74:36:19:15, the owner or operator shall install, calibrate, maintain, and operate continuous emission monitoring systems for opacity, carbon dioxide, sulfur dioxide, nitrogen oxide, and flue gas flow, on Unit #1 and continuous emission monitoring systems for carbon dioxide, sulfur dioxide, nitrogen oxide, and flue gas flow on Unit #13. The continuous monitoring systems on Unit #13 are required to be installed and operational prior to or upon initial startup of Unit #13. The Unit #13 continuous monitoring systems must be certified by the earlier of 90 unit operation days or 180 calendar days after the unit commences commercial operation. The continuous emission monitoring systems shall measure and record the emissions at all times, including periods of startup, shutdown, malfunction or emergency conditions. Monitor downtime is allowed for system breakdowns, repairs, calibration checks, zero and span adjustments, and when Unit #1 and #13 are not in operation.

Sulfur dioxide and nitrogen oxide emissions during continuous emission monitor downtime when Unit #1 and/or #13 are operational shall be determined in accordance with ARSD 74:36:16, as referenced to 40 CFR Part 75, Subpart D and E.

- **8.5** Performance specifications and quality assurance. In accordance with ARSD 74:36:07:03 and ARSD 74:36:13, the continuous emission monitoring systems on Unit #1 and #13 shall meet the performance specifications in 40 CFR Part 60, Appendix B and the quality assurance requirements in 40 CFR Part 60, Appendix F or the performance specifications in 40 CFR Part 75, Appendix A and the quality assurance requirements in 40 CFR Part 75, Appendix B.
- **8.6** Compliance assurance monitoring. In accordance with ARSD 74:36:13:08, as referenced to 40 CFR §§ 64.1 through 64.10, the owner or operator shall install, calibrate, maintain, and operate a device to monitor the pressure drop of the baghouse associated with Unit #6 through #12. If the pressure drop is less than the low range or higher than the high range noted in Table 8-1, the owner or operator shall conduct a visible emission reading in accordance with permit condition 8.1. If visible emissions are detected and the owner or operator is unable to eliminate the visible emissions in accordance with permit condition 8.1, the owner or operator shall conduct a performance test to verify compliance with the particulate limits noted in Chapter 6.0 within 90 days of the occurrence.

Table 8-1 - Pressure Drop Ranges

| Unit | Description | Pressure Drop Low Range | Pressure Drop High Range |
|-----------------|----------------------------|----------------------------|-----------------------------|
| #6 ¹ | Rotary car dumper conveyor | 1 inch of water | 19 inches of water |
| #7 | Rotary car dumper building | 1 inch of water | 19 inches of water |

| | | Pressure Drop | Pressure Drop |
|------------------|-----------------------------|-----------------|--------------------|
| Unit | Description | Low Range | High Range |
| #8 | Fuel transfer house | 1 inch of water | 8 inches of water |
| #9 | North fuel conveying system | ½ inch of water | 10 inches of water |
| #10 | South fuel conveying system | ½ inch of water | 10 inches of water |
| #11 | Fly ash storage silo | ½ inch of water | 10 inches of water |
| #12 ² | Lime storage silo | ½ inch of water | 5 inches of water |

¹ – The owner or operator is not required to measure the pressure drop on Unit #6 on or after the initial startup of Unit #13; and

9.0 PSD EXEMPTION

- **9.1 PM10 emission limit Unit** #12. In accordance with ARSD 74:36:05:16.01(8), the owner or operator shall not emit into the ambient air equal to or greater than 14.3 tons of particulate matter 10 microns in diameter or less (PM10) per 12-month rolling period from Unit #12. The short term and long term limits allow Unit #12 to forgo a Prevention of Significant Deterioration review for PM10. Any relaxation in this permit condition that increases PM10 emissions equal to or greater than 14.3 tons per year may require a full Prevention of Significant Deterioration review as though construction had not commenced on Unit #12.
- **Plantwide sulfur dioxide limit.** In accordance with ARSD 74:36:05:16.01(8), the owner or operator shall not emit into the ambient air greater than 13,278 tons of sulfur dioxide per 12-month rolling period from Unit #1, #2, #3, #4, #13, #14, #15, #25 and #33, regardless of the sulfur dioxide allowances provided in permit condition 10.1. The plantwide limit includes periods of startup, shutdown, and malfunction. The first month of the 12-month rolling total shall begin the month of the initial startup of Unit #13.

The plantwide sulfur dioxide limit allows Unit #13, #14, #15, #25 and #33 to forgo a Prevention of Significant Deterioration review for sulfur dioxide. Any relaxation in the permit that increases applicable emissions greater than 13,278 tons of sulfur dioxide per 12-month rolling period or a violation of the plantwide limit shall require a full Prevention of Significant Deterioration review for sulfur dioxide as though construction had not commenced on those sources.

The compliance demonstration for the plantwide limit shall be a summation of sulfur dioxide emissions released from Unit #1, #2, #3, #4, #13, #14, #15, #25 and #33. The sulfur dioxide emissions from Unit #1 and #13 shall be based on the continuous emission monitoring system associated with each unit. The sulfur dioxide emissions from Unit #2, #3, #4, #14, #15, #25 and #33 shall be based on the highest sulfur content specified in the fuel supplier's certification form or actual test results of the fuel burned and the amount of fuel burned in each unit.

² – The owner or operator is required to measure the pressure drop on Unit #12 and meet the requirements of this permit condition for Unit #12 on and after permit issuance.

- **9.3** Sulfur content limit for liquid fuel. In accordance with ARSD 74:36:05:16.01(8), on and after the initial startup of Unit #13, the owner or operator shall not burn distillate oil with a sulfur content greater than 0.05 percent sulfur by weight in Unit #2, #3 and #4. In addition, the owner or operator shall not burn distillate oil or biodiesel with a sulfur content greater than 0.0015 percent sulfur by weight in Unit #14, #15, #25 and #33.
- **9.4 Plantwide nitrogen oxide limit.** In accordance with ARSD 74:36:05:16.01(8), the owner or operator shall not emit into the ambient air greater than 16,448 tons of nitrogen oxide per 12-month rolling period from Unit #1, #2, #3, #4, #13, #14, #15, #25 and #33. The plantwide limit includes periods of startup, shutdown, and malfunction. The first month of the 12-month rolling total shall begin after initial startup of Unit #13.

The plantwide nitrogen oxide limit allows Unit #13, #14, #15, #25 and #33 to forgo a Prevention of Significant Deterioration review for nitrogen oxide. Any relaxation in the permit that increases applicable emissions greater than 16,448 tons of nitrogen oxide per 12-month rolling period or a violation of the plantwide limit shall require a full prevention of significant deterioration review for nitrogen oxide as though construction had not commenced on those sources.

The compliance demonstration for the plantwide limit shall be a summation of nitrogen oxide emissions released from Unit #1, #2, #3, #4, #13, #14, #15, #25 and #33. The nitrogen oxide emissions from Unit #1 and #13 shall be based on the continuous emission monitoring system associated with each unit. The nitrogen oxide emissions from Unit #2, #3, #4, #14, #15, #25 and #33 shall be based on the most recent stack performance test and the amount of fuel burned in each unit.

9.5 Short term nitrogen oxide emission limits. In accordance with ARSD 74:36:05:16.01(8), on or after the initial startup of Unit #13, the owner or operator shall not allow the emissions of nitrogen oxide in excess of the emission limit specified in Table 9-1 for the appropriate permitted unit, operation, and process.

Table 9-1 – Nitrogen Oxide Short Term Emission Limit

| Unit | Description | Nitrogen Oxide Emission Limit ¹ |
|------|-----------------------|---|
| #2 | Auxiliary boiler | 0.17 pounds per million Btus heat input |
| #3 | Heating boiler | 0.14 pounds per million Btus heat input |
| #4 | Generator | 0.024 pounds per horsepower hour |
| #14 | Fire pump | New Source Performance Standard – see permit condition 6.11 |
| #15 | Generator | New Source Performance Standard – see permit condition 6.11 |
| #25 | Booster pump (boiler) | New Source Performance Standard – see permit condition 6.11 |
| #33 | Booster pump (coal | New Source Performance Standard – see permit condition 6.11 |
| | area) | |

¹ – Compliance with the nitrogen oxide emission limit is based on the average of three test runs.

9.6 <u>Unit #1 operational limits.</u> In accordance with ARSD 74:36:05:16.01(8), on or after the initial startup of Unit #13, the owner or operator shall route the emissions from Unit #1 through the wet flue gas desulfurization system associated with Unit #13 at all times except during periods when the wet flue gas desulfurization system is not in operation due to malfunctions, repairs, preventative maintenance, or to conduct emissions testing to demonstrate compliance with the emission limits specific to Unit #13. Unit #1 may be operated when the wet flue gas desulfurization system is not in operation due to malfunctions, repairs, preventative maintenance, or to conduct emissions testing to demonstrate compliance with the emission limits specific to Unit #13 provided the owner or operator can demonstrate compliance with the plantwide sulfur dioxide limit in permit condition 9.2.

10.0 ACID RAIN PROGRAM

- **10.1** Acid rain sulfur dioxide requirements for Unit #1. In accordance with ARSD 74:36:16, the owner or operator shall operate Unit #1 in accordance with the standards and limitations, reporting, monitoring, recordkeeping, testing, and notification requirements set forth in the phase II Acid Rain permit applications for sulfur dioxide, submitted August 24, 1995 (see Attachment A), except the amount of sulfur dioxide emissions shall not exceed the plantwide limit in permit condition 9.2.
- **10.2** Acid rain nitrogen oxide requirements for Unit #1. In accordance with ARSD 74:36:16, the owner or operator shall operate Unit #1 in accordance with the standards and limitations, reporting, monitoring, recordkeeping, testing, and notification requirements set forth in the phase II nitrogen oxide compliance plan submitted November 4, 1997 (see Attachment B). In accordance with ARSD 74:36:16:05, as referenced to 40 CFR § 76.7(a)(2), the annual average emission limit for nitrogen oxide is 0.86 pounds per million Btus.

11.0 Hazardous Air Pollutant Emission Limits

- **Plantwide mercury emission limit.** In accordance with ARSD 74:36:05:16.01(8), the owner or operator shall not emit into the ambient air greater than 189 pounds of mercury per 12-month rolling period from Unit #1 and #13. The plantwide limit includes periods of startup, shutdown, and malfunction. The first month of the 12-month rolling total shall begin three years from the month of commencing commercial operation of Unit #13. The compliance demonstration for the plantwide limit shall be based on the monitoring requirements in permit condition 11.6.
- 11.2 <u>Unit #13 mercury emission limit</u>. In accordance with ARSD 74:36:05:16.01(8), the owner or operator shall not cause to be discharged into the atmosphere gases from Unit #13 that contain mercury in excess of 0.000066 pounds per megawatt-hour gross energy output. Compliance with the mercury emission limit shall be based on a 12-month rolling average using

the continuous emission monitoring system. The mercury limit applies at all times except during periods of startup, shutdown, or malfunction.

- 11.3 <u>Unit #13 hydrogen fluoride emission limit.</u> In accordance with ARSD 74:36:05:16.01(8), the owner or operator shall not cause to be discharged into the atmosphere gases from Unit #13 that contain hydrogen fluoride in excess of 2.17 pounds per hour. Compliance with the hydrogen fluoride emission limit is based on the stack testing requirements in Chapter 7.0.
- 11.4 <u>Unit #13 hydrogen chloride emission limit.</u> In accordance with ARSD 74:36:05:16.01(8), the owner or operator shall not cause to be discharged into the atmosphere gases from Unit #13 that contain hydrogen chloride in excess of 2.17 pounds per hour. Compliance with the hydrogen chloride emission limit is based on the stack testing requirements in Chapter 7.0.
- 11.5 <u>Unit wide hazardous air pollutant limit for Unit #13</u>. In accordance with ARSD 74:36:05:16.01(8), the owner or operator shall not emit greater than or equal to 9.5 tons of a single hazardous air pollutant or 23.8 tons of a combination of hazardous air pollutants from permitted units and fugitive sources per 12-month rolling period. The 12-month rolling total shall begin on the initial startup of Unit #13. The compliance demonstration for the Unit #13 limit shall be a summation of each hazardous air pollutant emission released from Unit #13. The mercury emissions from Unit #13 shall be based on the continuous emission monitoring system and the remaining hazardous air pollutant emissions shall be based on the most recent stack performance test, mass balance, emission factors, or other approved method of calculating hazardous air pollutant emissions.
- Continuous mercury emission monitoring system. In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall install, calibrate, maintain, and operate a continuous mercury emission monitoring system on the common stack for Unit #1 and #13. The owner or operator has the option of installing, calibrating, maintaining, and operating a continuous monitoring system on Unit #1 or parametric monitoring approved by the Secretary for time periods when the exhaust gas from Unit #1 is not passed through the common stack for Unit #1 and #13 as specified in permit condition 9.6. The continuous monitoring system is required to be installed and operational prior to or upon initial startup of Unit #13. The continuous monitoring system for mercury must be certified by the earlier of 90 unit operation days or 180 calendar days after the unit commences commercial operation. The continuous emission monitoring system shall measure and record the emissions at all times, including periods of startup, shutdown, malfunction or emergency conditions. Monitor downtime is allowed for system breakdowns, repairs, calibration checks, zero and span adjustments, and when Unit #13 is not in operation. The owner or operator shall submit the performance specification and quality assurance requirements for the system to the Secretary for approval prior to the initial startup of Unit #13.

- 11.7 <u>Unit #13 coal analysis</u>. In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall obtain a weekly composite coal sample of the coal to be burned in Unit #13 and determine the fluoride content by weight and chloride content by weight.
- 11.8 <u>Unit #13 case-by-case MACT exemption.</u> The owner or operator is exempt from a case-by-case MACT determination for Unit #13. The exemption is based on the operational and hazardous air pollutant emission limits in this permit. Any relaxation in a permit condition that increases the hazardous air pollutant emissions equal to or greater than 9.5 tons per 12-month rolling period for a single hazardous air pollutant or 23.8 tons per 12-month rolling period for any combination of hazardous air pollutants shall require a case-by-case MACT determination as though construction had not commenced on Unit #13.

APPENDIX A PHASE II ACID RAIN PERMIT APPLICATION

APPENDIX B NITROGEN OXIDE COMPLIANCE PLAN